

Carbon Steel Body, Hardened Chrome Plated,
Stainless Steel Ball and Stem



2-year warranty

Type overview

Type	DN
B2200VB-077	50

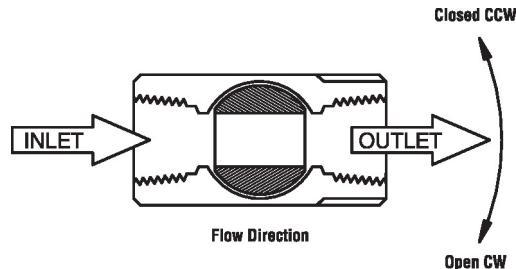
Technical data

Functional data	Valve size [mm]	2" [50]
Fluid	chilled or hot water, up to 60% glycol, steam	
Fluid Temp Range (water)	-22...380°F [-30...193°C]	
Fluid Temp Range (steam)	-22...380°F [-30...193°C]	
Body Pressure Rating	ANSI Class 300	
Close-off pressure Δps	250 psi	
Flow characteristic	equal percentage	
Rangeability Sv	300:1	
Maximum differential pressure (water)	150 psi	
Max Differential Pressure (Steam)	100 psi	
Close-Off Pressure (Steam)	150 psi	
Flow Pattern	2-way	
Leakage rate	ANSI Class IV	
Controllable flow range	75°	
Cv	77	
Maximum Inlet Pressure (Steam)	150 psi	
Materials	Valve body	WCC grade carbon steel
Body finish	matt black body finish	
Spindle	stainless steel	
Spindle seal	PTFE V-ring	
Seat	PTFE	
Pipe connection	NPT female ends	
Ball	stainless steel	
Suitable actuators	Non-Spring	SY1 AMB(X) PRB(X)
Spring	AF	
Electrical fail-safe	PKRB(X)	

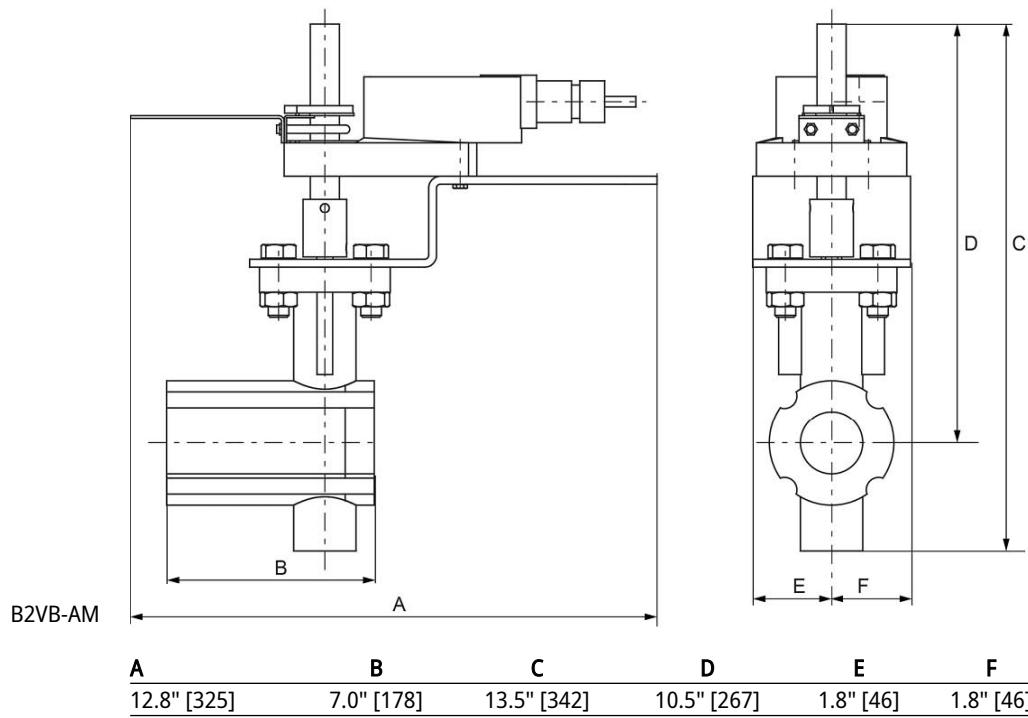
Product features

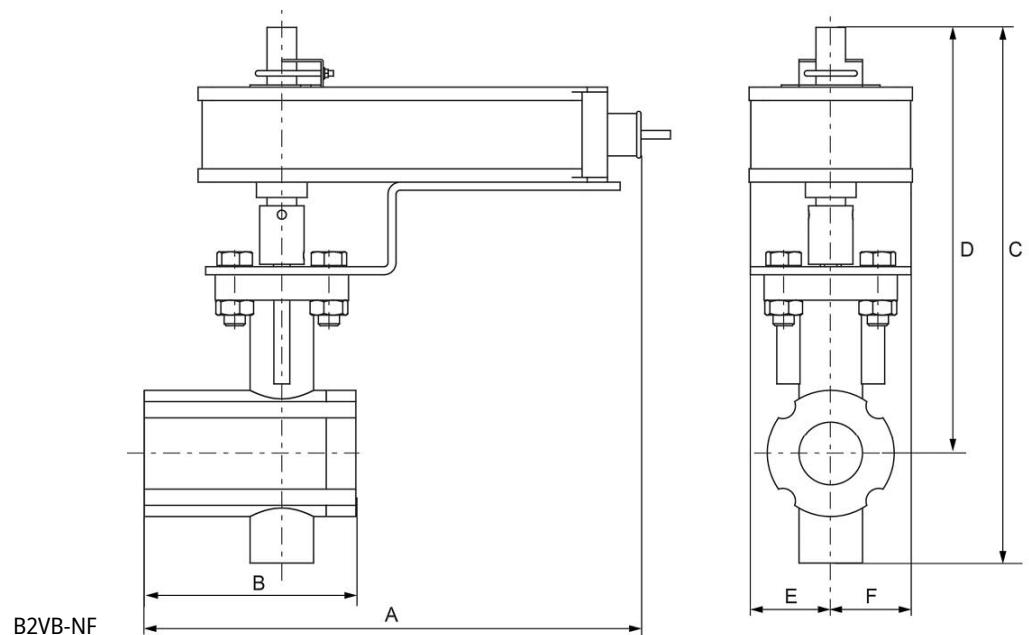
Product features	Fast quarter turn open or closed operation, stainless-steel ball and stem, positive isolation, two-piece body construction

Application Water-side control of air handling apparatus in ventilation and air-conditioning system.
Water/Steam control in heating system.
300:1 rangeability.
The dimensions and drilling of end flanges conform to the American cast iron flange standard, Class 150 (ANSI B16.1).

Flow/Mounting details**Dimensions**

Type	DN
B2200VB-077	50

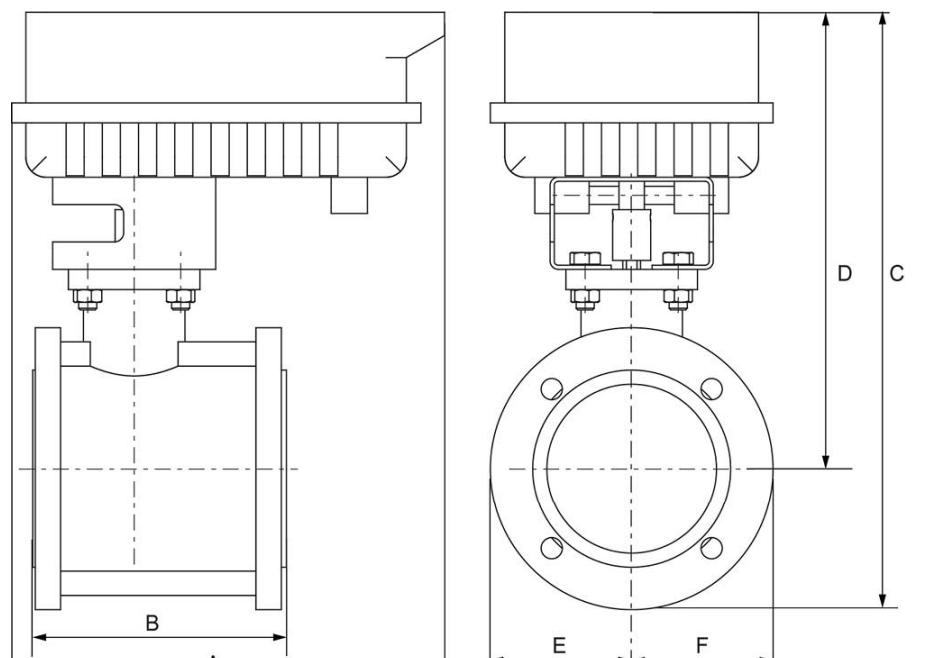




B2VB-NF

A	B	C	D	E	F
11.4" [289]	7.0" [178]	14.5" [368]	11.1" [283]	1.9" [48]	1.9" [48]

B2VB-PR



A	B	C	D	E	F
11.4" [289]	7.0" [178]	15.0" [380]	12.6" [321]	3.9" [100]	3.9" [100]



5-year warranty

**MFT****Technical data**

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	7.5 W
	Power consumption in rest position	3 W
	Transformer sizing	10 VA
	Electrical Connection	18 GA appliance cable, 1 m, 3 m or 5 m, with 1/2" conduit connector, degree of protection NEMA 2 / IP54
	Overload Protection	electronic throughout 0...95° rotation
Functional data	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Operating range Y variable	Start point 0.5...30 V End point 2.5...32 V
	Operating modes optional	variable (VDC, PWM, on/off, floating point)
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Position feedback U variable	VDC variable
	Direction of motion motor	selectable with switch 0/1
	Direction of motion fail-safe	reversible with cw/ccw mounting
	Manual override	5 mm hex crank (3/16" Allen), supplied
	Angle of rotation	95°
	Angle of rotation note	adjustable with mechanical end stop, 35...95°
	Running Time (Motor)	150 s / 90°
	Running time motor variable	70...220 s
	Running time fail-safe	<20 s
	Override control	MIN (minimum position) = 0% MID (intermediate position) = 50% MAX (maximum position) = 100%
	Noise level, motor	40 dB(A)
	Noise level, fail-safe	62 dB(A)
	Position indication	Mechanical
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU
	Quality Standard	ISO 9001

Safety data	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
Ambient humidity	Max. 95% RH, non-condensing	
Ambient temperature	-22...122°F [-30...50°C]	
Storage temperature	-40...176°F [-40...80°C]	
Servicing	maintenance-free	
Weight	Weight	4.6 lb [2.1 kg]
Materials	Housing material	Galvanized steel and plastic housing

Footnotes *Variable when configured with MFT options.

Accessories

Electrical accessories	Description	Type
Service Tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices		ZTH US

Electrical installation



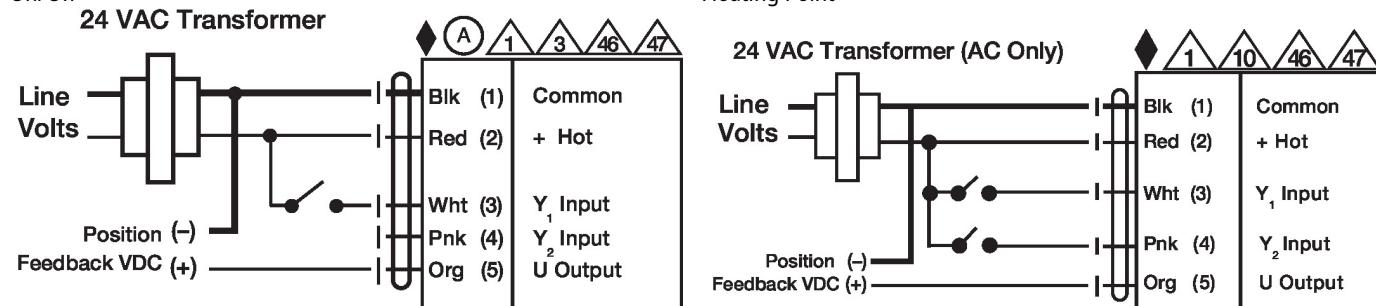
Warning! Live electrical components!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

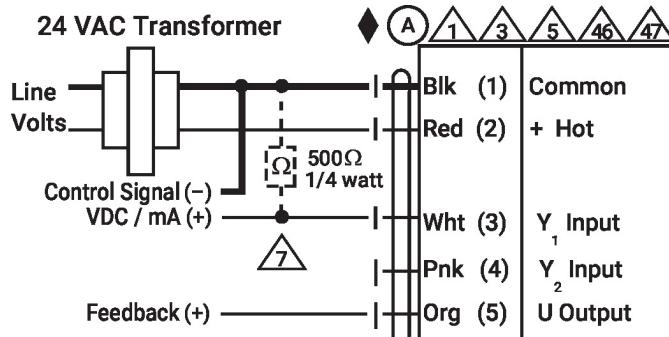
- ◆ Meets cULus requirements without the need of an electrical ground connection.
- ◆ Actuators with appliance cables are numbered.
- ◆ Provide overload protection and disconnect as required.
- ◆ Actuators may also be powered by DC 24 V.
- ◆ Only connect common to negative (-) leg of control circuits.
- ◆ A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
- ◆ Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 V line.
- ◆ For triac sink the Common connection from the actuator must be connected to the Hot connection of the controller. Position feedback cannot be used with a triac sink controller; the actuator internal common reference is not compatible.
- ◆ IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
- ◆ Actuators may be controlled in parallel. Current draw and input impedance must be observed.
- ◆ Master-Slave wiring required for piggy-back applications. Feedback from Master to control input(s) of Slave(s).

Wiring diagrams

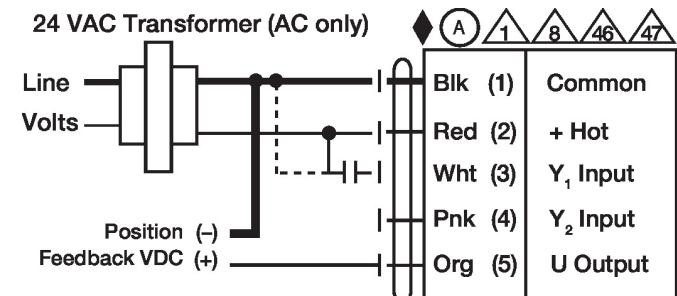
On/Off



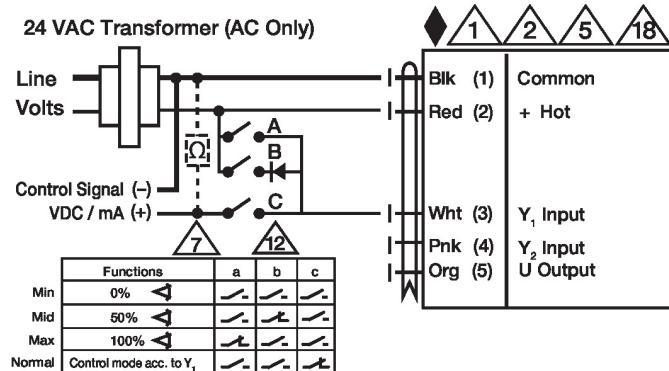
VDC/mA Control



PWM Control



Override Control



Primary - Secondary

